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Fabrication method for a matrix strip as a chip support element and for
semiconductor packaging elements with the matrix strip
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#Inventor:
15 LIOU SHING-JENG (TW); LIN JIA-YI (TW); LAI YA-YI (TW); HUANG KUEN-MING (TW); HE
TZUNG-DA (TW)
#Applicant:
SILICONWARE PREC IND CO LTD (TW)
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#Abstract:
35 A matrix strip used as a chip support element has a first surface and a second
surface and is constituted by a plurality of leadframes arranged in a matrix,
connection portions disposed between the adjacent leadframes, and side portions.
In addition, each leadframe has a chip pad and each connection portion is
provided with at least an E-pin hole passing through the matrix strip.
40 Fabrication method for semiconductor packaging elements with the matrix strip
includes the following steps: providing the matrix strip having the first
surface and the second surface and constituted by a plurality of leadframes
arranged in the matrix, connection portions disposed between the adjacent
leadframes, and side portions, in which each leadframe has a chip pad and each
connection portion is provided with at least an E-pin hole passing through the
45 matrix strip; adhering a tape to the second surface of the matrix strip, and
placing individually the semiconductor chip onto the chip pad in order that the
chip can be supported by the corresponding chip pad of the leadframe on the
first surface of the matrix strip, and the semiconductor chip can electrically
connect to the leadframe; encapsulating respectively the semiconductor chip such
50 that the encapsulant can cover each semiconductor chip and the leadframe, but
the second surface of the matrix strip remains uncovered; passing a plurality of
E-pins through the E-pin holes from the first surface of the matrix strip in
order to push the tape away from the second surface of the matrix strip; and
conducting the singulation operation to form the individual semiconductor
55 packaging element. Because the tape adhered to the matrix strip is pushed away
by passing the E-pins through the E-pin holes to generate the air gap between
the contact surface of the tape and the matrix strip, which further helps the
detachment of the tape, the manufacturing process becomes much easier. Besides,
it does not increase the difficulty during the manufacturing operation to add
60 the E-pin holes in the matrix strip, so the production cost will not be changed.